

Review Form1.7

JournalName:	JournalofAdvancesinMathematicsandComputerScience
ManuscriptNumber:	Ms_JAMCS_116815
TitleoftheManuscript:	SEIRSMATHEMATICALMODELONSTABILITYANALYSISOFHIV-1CORONAVIRUSCO-INFECTION.
Type of the Article	

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PART1:ReviewComments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that an author should write his/her feedback here)
Compulsory REVISION comments 1. Is the manuscript important for scientific community? (Please write a few sentences on this manuscript) 2. Is the title of the article suitable? (If not please suggest an alternative title)	somewhat yes	

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<p>3. Istheabstractofthearticlecomprehensive?</p> <p>4. Are subsections and structure of the manuscriptappropriate?</p> <p>5. Doyouthinkthemanuscriptisscientificallcorrect?</p> <p>6. Are the references sufficient and recent? If you havesuggestion of additional references, please mention in thereviewform.</p> <p><u>(Apart fromabovementioned6points,reviewersarefreetoprovideadditional suggestions/comments)</u></p>	<p>somewhat</p> <p>yes</p> <p>somewhat</p> <p>somewhat</p> <ol style="list-style-type: none"> 1. TheuseofadeterministicSVEIRmodelincorporatingtimedelayisappropriateforstudyingtheco-dynamicsof HIV-1andCoronavirusinfections. 2. Thepiecewiselineardynamical systemsapproachwithconstantdelayisavalidmathematicaltechnique. 3. EmployingtheNextGenerationMatrixapproachtocalculatethebasicreproductionnumber(R_0)isastandard epidemiologicalmodelingpractice. 4. The stability analysis using Lyapunov functions to determine the globalasymptoticstabilityof theDisease-Free Equilibrium(DFE)basedonthevalueofR_0isarigorousmathematicalapproach. 5. TheconditionforDFE stability($R_0 \leq 1$)andinstability($R_0 > 1$)isconsistentwiththeepidemiologicaltheory. 6. The study found that the DFE (i.e., the elimination of both HIV-1 andCoronavirusinfections)can beachievedwhenthebasicreproductionnumberislessthanorequalto one($R_0 \leq 1$). 7. ThefactorsinfluencingR_0includevaccination,timedelay,quarantine,andchemotherapyefficacyforboth HIV-1andCoronavirus. 8. Specifically, the study concluded that if all other factors are kept constant, theDFEcanbeachievedwhenthe drug efficacy (forbothHIV-1andCoronavirus)isabove50%. 9. The stability of the DFE is also influenced by the time delay (τ), where the DFEisstablefor$\tau > 0$and unstableotherwise. 10. The research employs rigorous mathematical modeling techniques andepidemiologicalprinciplestostudythestabilityofHIV-1andCoronavirus co-infection. 11. Theincorporationoftimedelay,vaccination,quarantine,andchemotherapyparameters adds practical relevance to the model and provides insights for publichealthinterventions. 12. Thefindingsregardingthedrug efficacy threshold (>50%)andtheimpactoftimedelay on DFE stability are valuable contributions to understanding the co-dynamics oftheseinfections. 13. The abstract, introduction, and conclusion must be rewritten, as well as acomparisonbetweenpreviousworksrelatedtotheworkandtopicoftheresearch,aswellas using modern references <p>Overall,theresearchappearstobewell-designed andcontributes totheunderstandingofHIV-1 and Coronavirusco-infection dynamics.</p>	
<p><u>Minor</u>REVISIONcomments</p> <p>1.Islanguage/Englishqualityof thearticlesuitablefor scholarlycommunications?</p>	<p>somewhat</p>	

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Optional/General comments		
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PART 2:

	Reviewer's comment	Author's comment <i>(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i>
Are there ethical issues in this manuscript?	<i>(If yes, Kindly please write down the ethical issues here in details)</i>	

Reviewer Details:

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